ANNEX
MAIN
RARE
UNDER

THE AMERICAN ARCHITECT AND BUILDING NEWS.

Copyright, 1876, JAMES R. OSGOOD & CO.

BOSTON, JAN. 8, 1876.

CONTENTS.

SUMMARY 9
THE ARCHITECTS' CONVENTION 10
THE REPORT OF THE CONVENTION 11
THE ILLUSTRATIONS 12
THE TEACHINGS OF CROYDON 14
CORRESPONDENCE 14
NOTES AND CLIPPINGS 16

THERE seems to be opportunity for a good art-exhibition at the Centennial of this year, especially if a liberal space is allowed for the works of foreign artists. It is said that the French Commissioner announces a collection of two thousand pictures by French artists. Those who know M. Doré's propensity for exhibiting will not be surprised to hear that many works of his are included in the number, nor greatly doubt his capability to supply the whole count, if he chooses. The American managers have had to answer, we are told, that they cannot provide room for so many. Of the six hundred applications for space that have been received from Italy, a large proportion is probably for works of art; and it appears that a large number of English pictures are expected. The arrangements for collecting the works of the older American artists do not seem to get on too well. There is a good deal of reluctance, in those who own them, to trust them to the dangers of transportation and exhibition. When it comes to selecting among the works of our living painters, there will be plenty of heart-burnings; but we can only hope the committees will be Rhadamanthine. The art-building is said to be nearly finished: provision has already been made for increasing the available space in it; but it would not be strange if an additional temporary building had to be put up. If it were in Paris, we should expect to see a supplementary exhibition of disappointed contributors outside the enclosure. It is interesting to know that the remote kingdom of Siam has appropriated a hundred thousand dollars for its representation.

There has been no movement, so far as we know, for a general exhibition of architectural designs. Whatever is done is likely to be by the inspiration of individuals or of local bodies. If there is any large collection, and if we are to be creditably represented, there will be need of vigorous weeding. A proposition was made in New York, we understand, to put up a model of an old Dutch colonial house; and the Massachusetts commission had it in mind to build an old-fashioned New England country house. It might perhaps be feasible, and it would certainly be more interesting, to buy such a house (of which there are many at this day perishing of neglect), and transport it to Philadelphia. The New England farmhouse of a hundred years ago is something *sui generis;* it would be interesting to have one with a history. The English commissioners have built, for their own occupation, two half-timbered houses in the style of two centuries ago. Illustrations of them have already appeared in The Building News.

THE British workman has again been dragged before the public; this time by Mr. John P. Seddon, an English architect whose position gives weight to his complaints. Mr. Seddon called public attention to the soldiering of the workmen who were building the great new aquarium at Westminster, by a letter to The Building News, in a way that implied that such idleness was characteristic of English mechanics. This has provoked some retorts in behalf of working men, and letters from several persons in support of Mr. Seddon. The discussion has more interest than a mere quarrel of individuals; for it touches upon an evil which is growing, or at least is reputed to be growing, upon all communities, — the disposition of workmen not only to get as high wages as they can, but to give as little work as possible in return. A clerk of the works, formerly a workman, writes to The Building News, that, according to his experience, workmen do not, as a class, give a fair return of labor such as their high rate of wages demands. He instances a shop in which he worked, where as soon as the foreman went out, a watch being set to announce his return, all hands stopped work to listen to a daily paper provided and read by each in turn. An architect writes of some interesting observations he had made: such as watching a workman asleep high up on a scaffolding three feet wide, and, on going out to wake him in fear of his falling, being told by his fellow-workman, "He's accustomed to it;" or watching his bricklayers alternately laying their brick with one hand in their pockets, and going into a corner to smoke; or, again, finding that his men had left their work in a body, and gone to the village green to enact Christy's Minstrels with blackened faces. We hope these things transcend the experience of architects and master-mechanics in our country; but all the concerted efforts of the trades seem to tend directly to reduce the quantity of work done. The answers which these reproaches have called out, in behalf of the workmen, are mainly retorts of, "You too," or inquiries why, then, contractors make money, and how it is that the aquarium mentioned goes on faster than most buildings; both of which are obviously begging the question. Another inquiry which has been made, — why architects as a rule hold workmen in contempt, and why workmen return the compliment, — if the assumption it involves is true, in England or elsewhere, deserves serious thought.

IT is curious to notice, that while in England the practice of the majority of architects is in the new Gothic style, and that those who have classic tendencies show them mostly by resorting to the Queen Anne, among the competitors for the gold medal of the Royal Academy only one offers a Gothic design. In the competition for the travelling scholarship, classic or Renaissance design was equally in the ascendant. This shows how the classic spirit lingers in the Academy, and indicates little sympathy in the body with the real tendency of the nation. The prizes, we believe, are almost the only official encouragement offered to students of architecture in England. This suggests a curious parallel with the influence of the French Academy through the *École des Beaux Arts;* which, however it may be accused of checking the free progress of architecture, is really thoroughly *en rapport* with the spirit of the whole profession in France.

THE system of living in flats, in the great cities, seems to be overspreading the world, and even in England it is attracting attention; but there it meets, as might be expected, with stubborn resistance. It has long prevailed in Edinburgh, which is much less like England than we are apt to assume on this side the water; and has been supposed, in fact, to have been exported thence into France. The system seems to be making some way in London, by stealth as it were; while people who speak with authority declare that it will not do for Englishmen. Mr. William H. White read a very interesting paper on the construction of flat-houses in Paris, at the last meeting of the Agricultural Association in London. The lively discussion which followed the paper showed the interest which this method of building is beginning to excite there. It seems, in fact, to be the best contrivance of modern times, for the secure and comfortable housing of a large number of people of different conditions, in the narrow spaces of a city. The adoption of it here and in England

would require an improvement in the ordinary standard of construction, and would on that account be advantageous, as well as on others. The main objection of the English thus far urged seems to be the necessity of the *concièrge;* but it does not follow that an English porter would be a French *concièrge;* nor, perhaps, would a Frenchman paint the *concièrge* as black as the Englishman does.

A SIGN of the encroachments of artistic interest among us, on fields from which it has hitherto been practically excluded, is a project of the Harvard Art Club, a club of the students, which proposes to establish in the university an art-scholarship, the condition of which shall be that the holder of it shall go to some fitting field, and undertake original investigations. A subscription has been set on foot to this end. We sympathize heartily with the spirit of this undertaking; and still are inclined to think that since the successful pursuit of the archæology of art demands a long and careful previous training, and since as yet this training is very much in abeyance among us, it would be worth while to provide at first for the present application of such a fund as it is proposed to raise to the maintenance or encouragement of students in art at the university itself. There is a considerable force of able and trained archæologists at work in the world; and it is a question whether for the moment we cannot accomplish a better work in establishing a standard of culture at home than in sending a student abroad to help them.

DR. CHANDLER, President of the Board of Health of New York, in his recent testimony before a legislative committee, gave it as his opinion, that no city should have a death-rate higher than seventeen per thousand per annum; but that, owing to improper sanitary arrangements, the rate in Boston in 1871 was 23.5; in 1872, 30.4; and, in 1873, 28.5. He puts the death-rate in New-York at 29. There is hardly a class of the community who have a better opportunity to exert an influence for securing a lower death-rate than architects. They have immediate charge of the interior arrangement of houses which set the example for all classes, and may greatly influence the demands of property-owners upon the authorities who have the management of sewers and all drainage. Whether the death-rate of a town is to be twenty or thirty, means practically, whether the population for whose accommodation they build shall die at an average age of thirty-three or fifty.

M. VIOLLET-LE-DUC has presided over a meeting of the *sculpteurs-modelleurs* of Paris, who will send three delegates to the Centennial Exhibition. It is a pleasant sign to see them meet under presidence of an architect who holds the position of M. Viollet-Le-Duc. We could wish to see such a class as these ornamental sculptors, who are distinctly artists, grow up among us here. We have a few clever men of the kind, but they are pretty much all imported: as soon as a native American becomes capable of such work as these do (or before), his ambition provokes him to betake himself to Rome, — or to Congress, — and expose himself as a maker of statues.

THE Greek Archæological Society has been pulling down the mediæval tower on the south wing of the Propylæum at Athens, for the sake of examining the old masonry beneath it, and the classic fragments which had been built into it. As yet, not much of importance has been found: the most notable thing is the base of a group of sculpture with the inscription, *Πιστων επωεσε*; Piston being a sculptor mentioned by Pliny, whose works, we believe, are not now to be found. Dr. Schliemann has furnished funds for the work.

THE CONVENTION OF THE INSTITUTE.

THE Convention held in Baltimore in November, of which we have elsewhere given a report, was perhaps more than usually interesting. The attendance was large. Delegates were present, and reports were read, from all but one of the Chapters. The business discussions were so animated and prolonged as to occupy the most of the sessions, and thrust the reading and discussion of papers, which is usually one of the prominent features of the conventions, somewhat into the background.

The most important topic brought up was the bill to establish a Bureau of Architecture, laid before the convention by the Board of Trustees, with reference to its presentation at the next Congress. It proposed the creation of a Bureau under direction of a "Government Architect," so called, with a suitable working-staff; and its salient provisions — for selecting architects for the public buildings by competition, instead of having the designs all made by the architect at Washington, and for letting out the work by contract — were substantially in accordance with the recommendations of the Supervising Architect in his recent annual report to the Secretary of the Treasury. To these was added a proposition that the architect should be charged with testing building materials sent to him from various parts of the country for that purpose. The Convention wisely declined to take definite action in bringing forward the measure till the whole question had received further consideration; and referred the bill to a committee, with power to act in consultation with Mr. Potter, the Supervising Architect. The bill being being now in the hands of the committee, discussion of it here would be out of place.

Some attempt was made to consider and amend in detail a blank form of building-contract which had been prepared by the Trustees according to the order of a previous Convention; but the discussion was found to be fruitless, and to refer the contract back for further consideration was its natural sequel. It is certainly desirable, if the Institute is to prepare such a document, to get suggestions from as many of the members as possible; but we very much doubt whether a body like the Convention could profitably take it in hand. It is a kind of work that can best be done by a small committee; and since it could be only recommended for use, not imposed, such a committee would seem to be sufficient sponsors for it.

The report of the Committee on Professional Practice was a summary of a tract on competitions, their advantages and disadvantages for both client and architect; an essay which it is proposed to work out as one of a series of papers on various subjects of architectural practice to be submitted for general criticism and further suggestion among the profession. The other matters which occupied the Convention, besides the usual addresses and papers, were chiefly administrative.

The change in the constitution of the Institute, by which it is divided into Chapters in different cities, has greatly increased its influence. The Chapters have become distinct centres of activity; and, if they do not do all the work or exert all the influence they might, they do accomplish a good deal in establishing the position and fixing the practice of architects. Formerly the members were few and scattered, except in New York, and without means of concerted action outside of the annual convention. Now the local Chapters include most of the abler architects in the cities where they exist; the majority of them are influential in giving tone to professional practice where they exist; and architects who do not belong to the association indirectly share the benefits of it.

Before the change all the serious work of the Institute was necessarily done in New York, and those members who lived elsewhere had scarcely an opportunity to participate

in it. It followed naturally, that as the profession grew in activity and numbers, architects felt the necessity in other cities of gathering into societies. The first of these, the Boston Society, was formed in 1867, and was for some years entirely independent of the Institute, of which nevertheless some of its own members were fellows; it being simply the outgrowth of the need of professional association and intercourse, for which outside of New York, its headquarters, the Institute in its former organization gave no sufficient opportunities. The younger society once fairly established and in working order, it soon appeared that there would be the difficulty of divided aims and wasted force, unless the two bodies could be brought into a common organization. There was a considerable debate in the adjustment of local and central authority, the old discussions of State rights and federalism on a small scale; and, after much study and delay, the present organization was decided upon, under which the Boston Society was incorporated with the Institute. At about the same time, and at intervals afterwards, other chapters were formed, generally around a nucleus of former members of the Institute, until the association has grown to its present size. The scheme finally adopted, by which the local bodies, made chapters of the Institute, are left free in the choice of their own members, who thereby become associates of the Institute, and eligible for election at large as its fellows, has met the difficulties so well, and proved so practicable, that it has called out the commendation of the French and German architectural societies, and has been imitated by the *Société Centrale des Architectes* of France. The chapters are left free in all that belongs to their organization and the conduct of their meetings; and only such things as concern the whole profession equally are left to the care of the body at large; while the simple condition of eligibility to the Institute — the honorable practice of the profession — leaves the doors of the local bodies as wide open as they could desire. The conventions not only serve for the transaction of the business which the chapters have in common, and call out a certain amount of thought in the form of reports, addresses, and papers, but, by bringing together the ideas of the different sections of the profession, they exert an indirect influence which is probably more valuable than the direct effect of their resolves and publications.

It was unfortunate, though it seemed to be necessary, that the consideration of business questions left the Convention so little time for the discussion of the papers that were read before it — so little, in fact, that they were not discussed at all, but only read during the last hours of the Convention, to a house that was already thinned. It is the more to be regretted because, under the pressure to which the whole profession is subject from without, questions of business, which after all enforce their own sentiments by a rapid process of natural selection, tend to drive questions of technical study to the wall, so that the opportunities of discussing them are very limited. It specially concerns the Institute not only to provide for matters of business practice, which are sure to be settled in the long-run, but to give all possible heed and stimulus to professional culture among its members.

NINTH ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS.

SESSIONS OF NOV. 18 AND 19.

THE Convention met at ten A.M. on Thursday, Nov. 18, Mr. Walter being in the chair. The first business in order being the consideration of reports of committees continued from the day before, it was voted that the clause in the report of the board of trustees, which related to a bill for the establishment of a Bureau of Architecture, be taken up and considered. That portion of the report which bore on the subject was read by the secretary, as follows: —

The subject of engaging the best talent of the country for the architectural work of the Government, has, for a number of years, engaged the attention of some of the members of the Institute. With the growth of population and extension of trade, the necessity of providing federal buildings for the new States and Territories, as well as for the old cities, is largely and rapidly increasing, and has, indeed, long overstepped the mark at which it would be possible for a single person, however talented, accomplished, and experienced, to impress his artistic individuality on the designs of the structures committed to his care. But, though this fact has long been apparent, no favorable opportunity offered itself for asserting the artistic rights of the public, and of the specialists paid by the public in the matter, until the withdrawal, toward the end of last year, of the late Supervising Architect of the Treasury Department. Immediately thereafter, the Board addressed a note to the Secretary of the Treasury, asking if he would like to receive some suggestions on the subject of a re-organization of the Architectural Bureau in his department. A favorable answer being received, the following communication was addressed to him: —

NEW YORK, Dec. 4, 1874.

TO THE HON. B. H. BRISTOW, SECRETARY OF THE TREASURY.

Sir, — In answer to your favor of the 30th ult., the Board of Trustees beg leave to submit the following suggestions for the organization of a Bureau of Architecture of the United States Government under your Department, as preliminary to a more elaborate and detailed scheme, if desired: —

First, The Government Architect to be an administrator in the interest of the Government, and his duties to be executive.

Second, The architect of future public buildings to be selected either by competition or appointment, as may be determined by the Honorable the Secretary of the Treasury.

Third, The duties of such architect shall be the same as prevail in private practice; viz., preparing all necessary drawings and specifications, procuring estimates, and superintending the work; the compensation to be the usual one of five per cent on the cost of the work.

Fourth, The Government architect to have the charge of all buildings heretofore erected, and to execute all contracts for all Government buildings; a clerk of the works to be furnished for each Government building in course of erection, who shall be subject to the control of the architect.

The Board is aware, in view of the meagre emoluments of public officers in this Republic, that it stands on delicate ground in recommending that the Government Architect shall be paid a salary much higher than at present attached to the office of Supervising Architect of the Treasury Department; but it can see no other way in which the best talent of the country can be secured; and it points to instances where architects — as the architect of the Albany Capitol, and of the municipal buildings in Philadelphia — receive salaries very much higher than that of the chief magistrate of the State or city.

To sum up, the Board believe that the scheme roughly sketched above (and which, of course, would be subject to modifications, or further consideration of all the exigencies of the case) would offer artistic advantages for the public, and financial advantages for the Government, greatly in advance of the present method.

Systems somewhat similar to the scheme proposed have long prevailed in England, Germany, France, and other European States.

I am, sir, your obedient servant,

A. J. BLOOR, *Secretary A. I. A.*

Before the formal consideration of the bill, papers on the history of government architecture in the country were read by Mr. Smithmeyer and Mr. Wight. In reference to some statements in the papers, Mr. Walter explained that, until the very recent legalization of the appointment of the supervising architect, the only law which established the position of any government architect was the original one which created the office of architect of the Capitol. The laws which ordered the building of the Patent Office, Post Office, and Treasury, and even the dome of the Capitol, did not provide any formal appointment for the architect in charge of them, although in each case he, Mr. Walter, was named as the architect who should be intrusted with the work.

After the reading of Mr. Smithmeyer's and Mr. Wight's papers, the bill was taken up and considered in detail.

A long discussion followed, which occupied not only the rest of the morning session, but the whole of the afternoon session; at the end of which the following resolution was offered by Mr. Van Brunt: —

Resolved, That this bill as a whole be referred with power to a committee to be selected by the chair, with instructions to confer with the supervising architect, and to take such action with regard to the provisions of this bill and its presentation to Congress, as may be found to be most consistent with the greatest interests of the profession.

After some debate, the resolution was amended by inserting the words, "with power to increase its numbers," and with that addition was passed. The chairman appointed as members of the Committee, Messrs. Van Brunt, McArthur, and Post; after which, at five P.M., the Convention adjourned to the next day.

The Convention met again on Friday, at ten A.M., and undertook the consideration, section by section, of the draft of form for building-contract, which was offered by the Board of Trustees, in accordance with the vote of the previous Convention. After spending some time in discussion and amendment of the contract, it was voted that all proposed amendments to it should be submitted in writing, and that the draft, with the amendments, should be referred back to the Board of Trustees. The Convention then considered the several proposed amendments to the By-laws of the Institute, and the following were voted: —

ART. I. *Sect.* 2. The Associates of the Institute shall consist of such practising architects, not Fellows, (1st) as shall be members of the chapters, and (2d) as shall be elected by the Board of Trustees, upon nomination of two Fellows.

ART. II. *Sect.* 2. No candidate *for Fellow* shall be entitled to membership, until his initiation-fee is paid.

ART. II. *Sect.* 4. If a member fail to pay his annual dues in any year, within thirty days from the time at which the whole of it becomes due, the Treasurer shall cause him to be notified, that, unless the same shall be paid within one month thereafter, his membership shall cease; and in case such dues shall not be paid pursuant to such notice, or such default be accounted for to the satisfaction of the Board of Trustees, his name shall be stricken from the roll of the Institute.

ART. II. *Sect.* 6. Candidates who shall have been elected Fellows or Associates after the 1st of October in any year shall pay only one-half the regular annual *dues* for that year.

ART. X. *Sect.* 1. The Committee on Publications shall consist of five Fellows.

The Baltimore Chapter proposed an amendment for regulating the standing of members who had been dropped by the Chapters for non-payment of dues, which, after some consideration, was voted in the following form: —

No person, who has for cause and in accordance with the Chapter and Institute By-laws been dropped from the rolls of the Chapter, shall be re-admitted or continued as a member of the Institute, without the consent of the Chapter from which he was dropped, signified in writing through its proper officers.

The Secretary then proposed the following resolution: —

That a committee of inspection and advice on the administration of the Institute, consisting of Messrs. Longfellow of Boston, Stone of Providence, and McArthur of Philadelphia, be appointed to visit New York, and examine the whole record and working appliances of the Board of Trustees, including their minutes, and all the books of the Secretary, and to make a report to the Board of Trustees, giving the result of their observations, and making such recommendations as they might think proper; and that the Board of Trustees should act on those recommendations as they should judge best for the interests of the Institute; the actual travelling and hotel expenses of the Committee to be defrayed by the Institute.

He thought it quite important, since the executive management of the Institute was carried on and its expenses adjusted in New York, that the members in other cities should have a better understanding than they now have of the way in which it is conducted. Members from various cities spoke in favor of the resolution; and it appeared in the discussion that most of the Chapters had instructed their delegates to urge the reduction of the annual assessments, if they could be reduced without prejudice to its interests and efficiency. The resolution was voted, with amendments directing the Committee to report not to the Board of Trustees, but directly by circular to the Fellows of the Institute, and giving them power to fill vacancies.

The reading of papers was then taken up. Mr. Niernsee, sen., read a paper on the apartment houses of Vienna. The Secretary read a paper prepared by Mr. Cluss, on the properties and functions of building-materials, and the effects of ground-moisture and dampness in old and new dwellings. These papers were accepted with thanks, and the Convention adjourned for its recess.

After the recess, Mr. Pfeiffer moved to reconsider the resolution of the day before, which referred the Bureau Bill to a committee, for the purpose of appointing a larger committee. His motion was carried; and a new committee was appointed, consisting of Messrs. Haight, Bloor, Pfeiffer, Van Brunt, Lind, Smithmeyer, Nash, Scofield, Walter, Wight, and Stone.

Mr. Pfeiffer read a paper on sewerage and plumbing, which was accepted with thanks.

An order was passed directing the Committee on Publications to have the proceedings published as promptly, and in as concise a form, as possible. The Secretary offered a resolution recommending to the Chapters that junior members should not be called upon to pay any dues except their initiation-fees, and that any junior who removed from any Chapter with a certificate of good standing should be received in the Chapter to which he removed without a re-election. The motion was passed.

Mr. Stone presented the report of Auditing Committee, approving the Treasurer's accounts.

The thanks of the Institute were voted to Mr. Hunt for presiding over the Convention, to the Baltimore Chapter for its entertainment, to the Mayor of Baltimore for courtesies extended at the City Hall, to William T. Walters, Esq., for the invitation to inspect his collection, to John S. Gittings, Esq., for the use of the rooms in which the evening exhibition had been held, and to the press for its reports of the proceedings. It was recommended to the Trustees that the next Convention be held in Philadelphia.

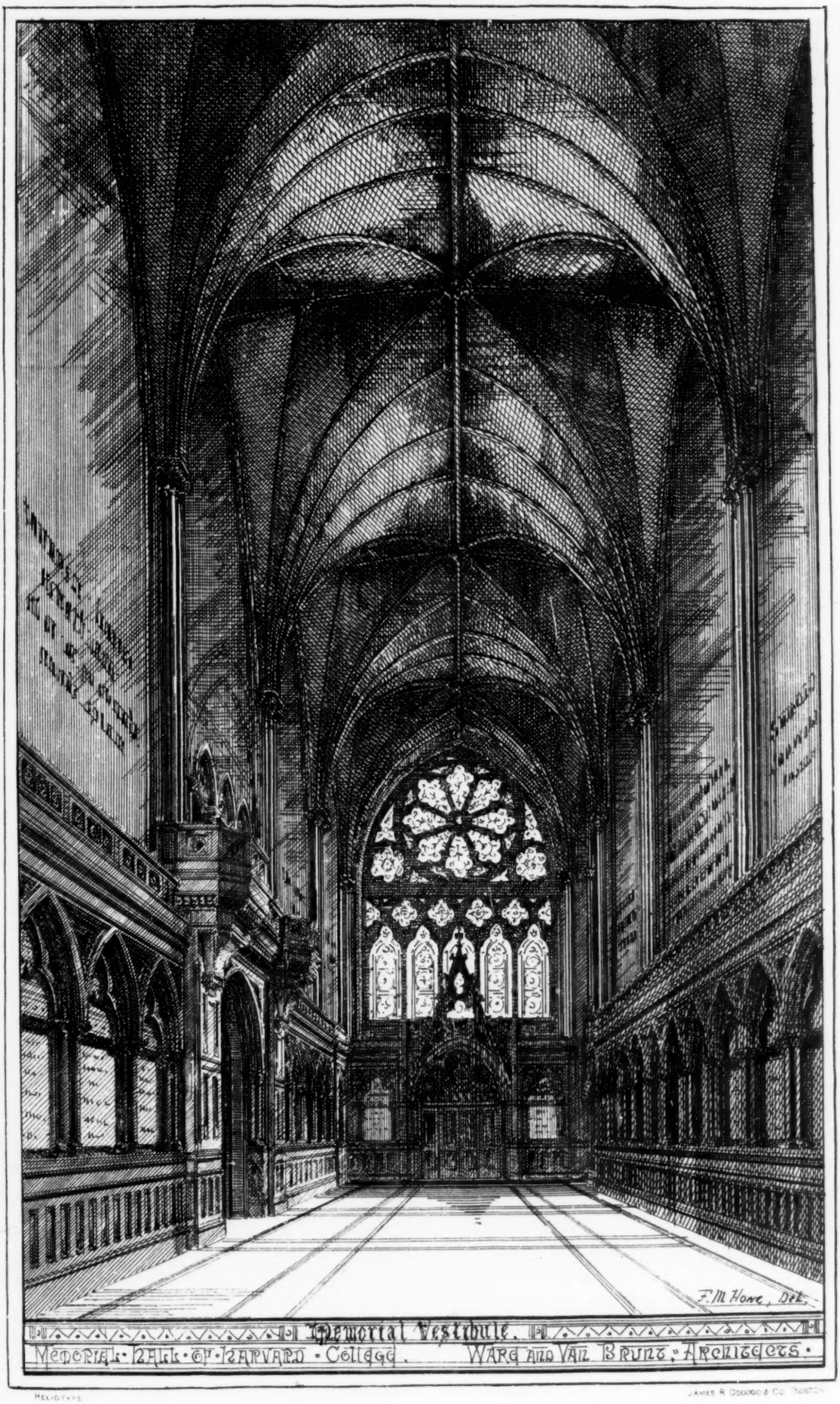
Some interesting remarks on the manufacture of terra-cotta and its use in building were made by Messrs. Loring and Wight; after which, at half-past five, P.M., the Convention adjourned *sine die*.

THE ILLUSTRATIONS.

THE VESTIBULE OF THE MEMORIAL HALL OF CAMBRIDGE.

THE Memorial Hall of Harvard University, now just approaching completion, takes its name from the central portion of the building, of the interior of which we give an illustration. This hall, which serves as a vestibule to the Dining Hall and to the Academic Theatre, between which it lies, is thirty feet wide, a hundred and twelve feet long, and fifty-eight feet high. The pavement is of marble, the walls plastered, and the vaulted ceiling with the vaulting shafts below is of brown ash. The vault is constructed in accordance with the English system, as distinguished from that in use upon the Continent. The joints accordingly being parallel, the execution of the vaulting surfaces in ordinary matched sheathing presents no difficulty. In the case in hand, each strip was laid with a spirit level, so that the horizontal lines of the sheathing, hardly to be distinguished in the plate from the shade lines, exhibit the true form of the pyramidal surfaces, like contour lines in a topographical map.

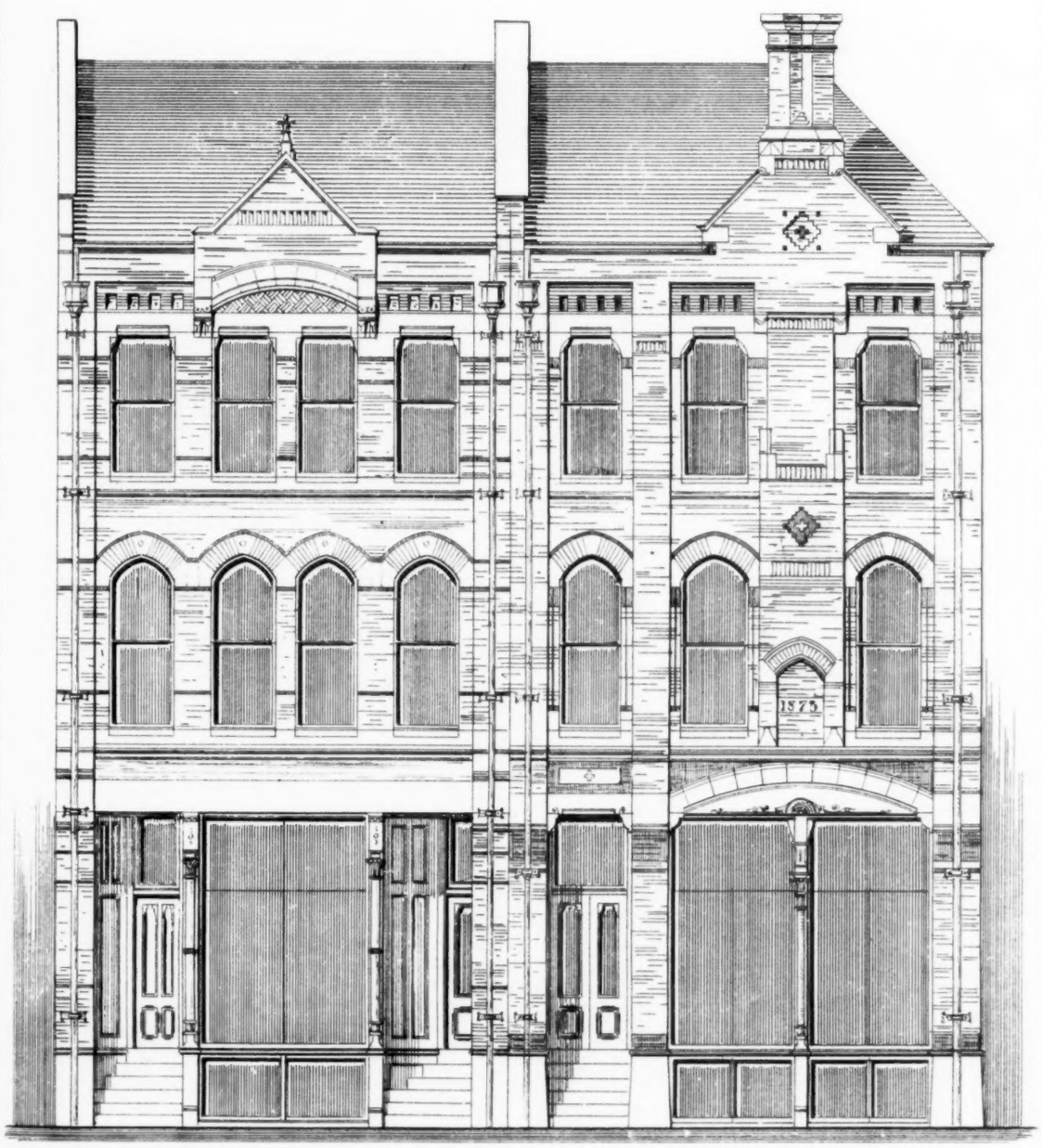
The walls below are occupied to the height of eighteen feet by a carved black walnut screen in the form of an arcade. The arches, twenty-eight in number, contain each a marble tablet surmounted



Memorial Vestibule.

Memorial Hall of Harvard College. WARE AND VAN BRUNT, Architects.

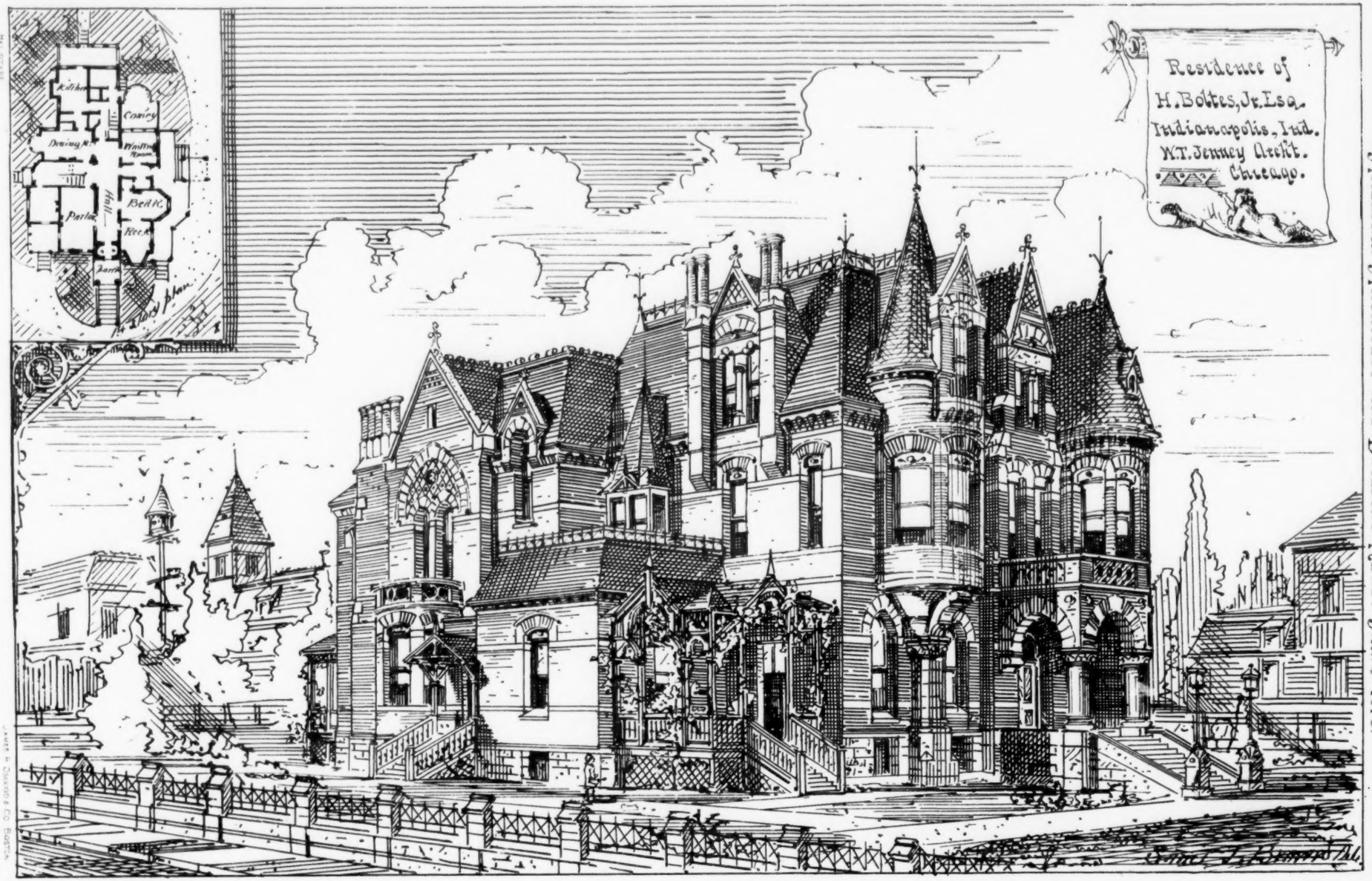
HELIOTYPE JAMES R. OSGOOD & CO. BOSTON



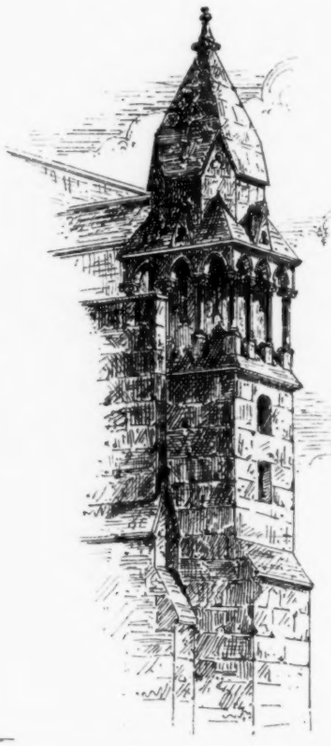
Building: on: Liberty: Sq: Boston:

Peabody & Stearns: Archts

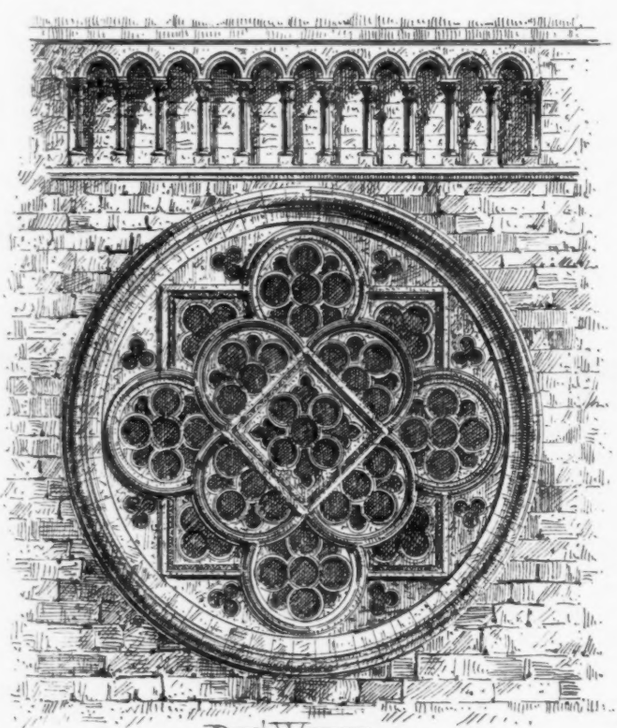
H. M. STEPHENSON DEL.
HELIOTYPE
JAMES R. OSGOOD & CO. BOSTON


Residence of
H. Boltes, Jr. Esq.
Indianapolis, Ind.
W.T. Jenney Archt.
Chicago.
Parlor
Hall
Bed R.
Rec.
Library
Dining R.
Waiting Room
Conicy
1st Story Plan.

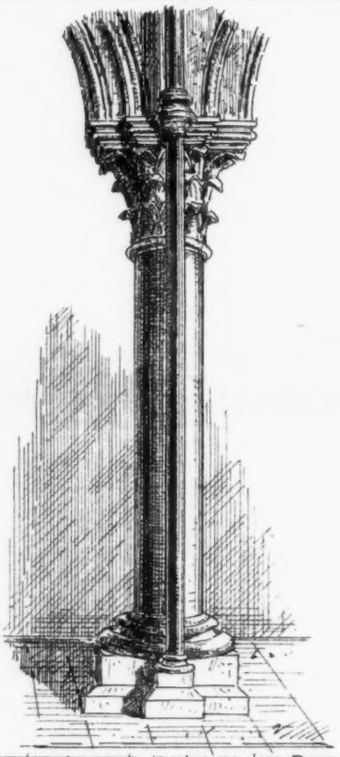
South porch.



Staircase turret at North of Nave



Rose Window
in South Transept.



Intermediate pier of 1st Bay
of Nave

Details from Lausanne Cathedral

HELIOTYPE

JAMES R. OSGOOD & CO. BOSTON

by a mosaic or inlay of carved and colored marbles. On these tablets are inscribed the names of the graduates or students of the university, who fell in defence of the Union during the civil war, with the date of their death, and the place of death of those who died in battle. Of the one hundred and thirty-six names, ninety-seven are ranged according to the date of the college class to which they belonged, the rest being students of the various professional schools. Above, the wall is occupied by inscriptions.

This hall gives access to the Dining Hall through the doorway in the centre, seen on the left of the plate; and to the theatre by means of doorways at either end, on the opposite side. These are at three different levels, and are reached by staircases.

The foundations of the Dining Hall and the Memorial Vestibule were laid in 1870, the walls and roof completed in 1872, and the interior finished and the building dedicated in 1874. Work upon the Theatre was begun in the spring of 1875. It will be ready for occupancy by Commencement of this year.

The whole building, which is finished in brick and Nova Scotia stone, is three hundred and ten feet long, and in its widest part a hundred and fourteen feet wide. The total cost will be about three hundred and seventy-five thousand dollars.

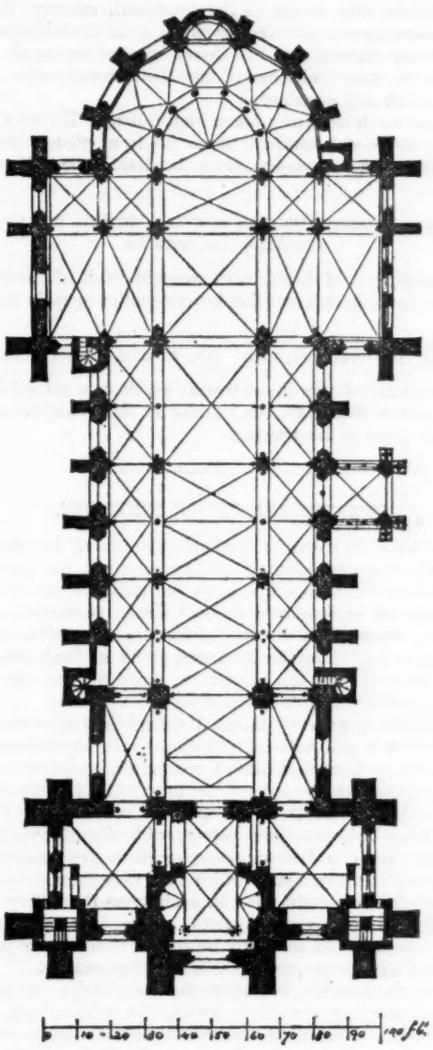
LAUSANNE CATHEDRAL.

The picturesque exterior of this cathedral is well known to travellers. It stands well near the southern end of the little plateau which forms the citadel, as it were, of Lausanne, and if it had been completed would have made an imposing crown to the city, supported by the fine old castle at the northern end of the plateau. It is, as the plan which we append shows, a cathedral of the regular French type, though not a very large one, and lacking the *chevet*. Nave, transepts, and polygonal choir are complete; and there are five towers, one at the crossing, two on the west front, and one each side of the choir, east of the transepts. The towers on the west angles of the transept are omitted, the place of the southern one being almost occupied by the picturesque porch of which we give an illustration. The south-west tower alone rises well above the roof, standing free by two gracefully arcaded stories, which bring it to the base of the intended spire, replaced by a small octagonal pyramid of slated wood. The other towers barely clear the roof, except the central one, which shows above the square tower an octagonal story prepared for a lofty spire, but actually covered with a thin wooden *flèche*, for it is hardly more, which protrudes alone and spiky from the middle of the octagon, and contrasts oddly with the solid mass of roofs and towers below it.

The church is said to have been founded at the beginning of the eleventh century, and, after being once or twice damaged by fire, was mainly rebuilt in the thirteenth. It was consecrated in 1275, and last October celebrated its sixth centennial, at which time a project was set on foot for restoring it under the care of M. Viollet-Le-Duc. Although the rebuilding is said to have begun in 1235, when the French pointed style was fully developed, as at Rheims, much of the pointed work seems barely emancipated from the transition. The design of the twelfth century is predominant in the great rose-window of the south transept, which is mentioned with admiration and depicted in the album of the thirteenth century architect, Wilars de Honecourt. We give sketches of this, and of one of the two staircase turrets which flank the nave, the northern one. The transition from the square to the octagon in the turret is quaintly picturesque.

The glory of Lausanne is its interior, built of warm, soft-hued drab sandstone. It shows, as no other church in Switzerland does, the serene grace of the early French pointed work in its purity. It would be hard to find a lovelier example of the characteristic use of the detached shafts, of which, it is popularly said, there are a thousand in the interior. There is a singular, and, so far as we know, unique inner porch, a rectangle in plan, with two lateral apses surrounded by an arcade on detached columns. The nave is low, not much over sixty feet high, but relieved by the slender treatment of its piers and shafts. The piers are beautifully grouped and varied. Those in the *pourtour* of the choir are of course round columns.

The vaulting of the crossing and of the first bay of the nave is hexapartite: the rest is quadripartite; but the alternation of lighter and heavier piers, of which the hexapartite arrangement furnished the motive, is continued all down the nave. The principal nave-piers are completely grouped, each in twelve shafts, corresponding to the orders of the arches they carry; but the intermediate ones are beautifully varied. That of the first (hexapartite) bay is a round shaft with a single slender vaulting-shaft, which carries only the sub-pendentive, running quite down to the floor, and detached from the main shaft except where the abacus of the main capital encircles it. It is shown but poorly in our illustration. The second intermediate pier consists of two round columns coupled, with a vaulting shaft running to the floor, and detached like the last, but considerably stouter, having to carry the main pendentive of the quadripartite vault. The abacus of the vaulting shaft by a singular freak is round. Finally, the third intermediate is of two main shafts coupled, with sub-shafts, and vaulting shafts triple down to the triforium; the middle one of the group alone continuing below this, and stopping on the abacus of the main capital. It is evident that the choir and the first (hexapartite) bay of the rear were built before the rest, as was very often the case; and there is indication of a second break before we come to the last (western) bay, which is considerably wider than the others.



The triforium is an arcade of small arches, five in each bay,—a screen, in fact, before a blank wall, after the French fashion, with a walk between. That of the choir is round arched or indistinguishably pointed, the point of the arch growing more marked as we come down the nave, and the later bays having small trefoils pierced in the spandrels. The clerestory is double; that is to say, an inner open arcade, and an outer wall pierced with windows. The arcade is triple, the middle arch being much larger than the lateral ones, and the single window placed opposite it. The mouldings throughout are the simple ones of the earliest French pointed work, being mostly roll-chamfers, alone or with hollows between. The abaci are uniformly square, excepting the single pair of round ones on the vaulting shafts just mentioned. Where the vaulting shafts are triple, those that carry the diagonal ribs are placed diagonally, after the manner of the transition period. The profiling of the ribs and of the archivolts of the clerestory has a peculiarity which we are accustomed to associate with Burgundian

architecture; that is, they are moulded with edge-rolls, and the soffit between hollowed out, a treatment which gives great lightness, refinement, and appearance of elasticity, to the vaults and arches. In both ribs and archivolts the mouldings are treated like stop-chamfers, stopped against a scollop on a square block, just above the abacus; a treatment which we believe rarely survived the transition. The clerestory shows noticeably the Burgundian character of the work, greatly resembling the charming clerestory of the cathedral at Geneva and the still more charming one of Besançon.

A trefoil-headed arcade with round lobes follows the wall of the nave aisles; on the wall of the choir aisle is a round-arched arcade carried on pilasters, which is part of the earlier Romanesque building. Happily the church has been but little tampered with since it was completed in the thirteenth century. It even escaped the chapel-building mania of the fourteenth century, the only chapel besides these under the towers being the small original apse at the extreme eastern end. It shows few disfigurements except a number of ugly pinnacles of late Renaissance work on the southern porch and elsewhere.

The plan which we give is taken from Lübke. The drawings of the rose-window and southern porch are from photographs; the staircase-turret and nave-piers, from sketches in the editors' note-books.

BUILDING IN LIBERTY SQUARE, BOSTON. MESSRS. PEABODY AND STEARNS, ARCHITECTS.

The building is of brick, with wrought work of Nova Scotia stone, and iron columns and lintels between the piers in the lower story.

HOUSE AT INDIANAPOLIS, IND. MR. W. L. B. JENNY, ARCHITECT.

By a mistake of the draughtsman, which was not detected in time to correct the plate, the initials of Mr. Jenny's name are incorrectly given in the drawing.

THE TEACHINGS OF CROYDON.

THE town of Croydon in England was one of the earliest to construct a thorough system of modern sewerage; and, fortunately for our instructive knowledge as to the influence of sewers and house-drains on epidemics of typhoid fever, its sanitary matters have been, almost from the first, under the observation, and to a great extent guided by the influence, of its medical officer, Dr. Alfred Carpenter, who has missed no opportunity to add to the world's knowledge as to the causation of this disease.

Croydon lies in a part of England which has always been more or less subject to outbreaks of typhoid fever in an epidemic form whenever its seeds were planted there; and the construction of the very complete sewerage works of the town seems to have been the signal for the outbreak of an epidemic of peculiar virulence. Several times during its later history, epidemics of typhoid fever have been traced to defects, not so much in the construction of the works as in the system on which they were arranged; so that, as a means for public education in sanitary matters, Croydon has always been conspicuously useful. One improvement after another was adopted; and this town had come to be popularly regarded as a model of perfection in sewerage matters.

Quite to the surprise of sanitarians, there broke out here last spring another very serious epidemic, the most serious one for ten years past. During this interval individual houses or sets of houses were attacked at longer or shorter intervals; and the cause was always traced to defects in the sewers, to local contamination of the drinking-water, to faulty ventilation, or to other local causes.

Ten years ago Dr. Carpenter recommended the passing of an ordinance to the effect that "no pipe conveying water from the water-main should be allowed to come into direct communication with the sewer or house-drain." He failed to carry this ordinance except as a rule applicable to new houses. Old houses were left in their old condition; and in these houses there were three thousand water-closets whose interiors were in direct communication with the supply pipes acting from the street mains. A constant water supply (that is, the water-pipes being kept constantly filled) was insisted upon. Last spring, however, the local authorities, in spite of the medical officer's protest, gave permission for an intermittent supply for one week (an intermittent supply means that periodically the water falls away in all the supply-pipes, and air rushes in at all of their open tops, — air frequently contaminated by the contents of closets, and not seldom carrying with it particles of those contents themselves). Immediately there broke out a severe typhoid epidemic; and by the end of June four hundred cases and thirty-four deaths were reported. After a time the fever declined, and almost disappeared; but after another period of intermittent supply, at the end of September, it reappeared in the district where the intermittent supply had been allowed. Hereupon the local board was convinced of its error, and agreed to adopt the necessary preventive measures. "The evidence that it was in the water consisted, first, in the complaints made by many persons that the water was not so good as usual. This complaint was irregular, and confined to a few houses at distant parts of the district, not to one main, but in a variety of places. Second, the persons affected consisted, in a great measure, of water-drinkers. Third, in one district in which the mains of a rival company (the Lambeth) occupied one side of the road, and the Croydon works supplied the other, the fever only arose on the side supplied by the Croydon main; whilst the sewer ran along the middle of the road, and was common to the houses on both sides of it. Fourth, persons had the disease who were connected with the water-works, but not in the drainage area. Fifth, those living in the drainage area, and not connected with the Croydon water-works, in a great measure escaped. Sixth, those cases which were found in the drainage area had moved out of the water district, whilst those in the water district and not in the drainage area had not so moved from one place to the other. Seventh, there were many other striking instances, such as, a large number of persons affected being in the habit of drinking a glass of water the first thing in the morning as soon as they got up, the water being that first drawn from the tap. And, lastly, the discovery by Dr. Philpot, the medical officer of health, of several places in the services by which contamination must necessarily have arisen whenever the water-supply was intermittent."

On this evidence Dr. Carpenter's suggestion concerning water-pipes and their connection with sewers and drains was adopted as a law; also the following: "That no sewer or drain conveying slop-water or sewage should ever be so constructed as to allow of the gaseous products of change in the contents of the sewer to find their way directly into the houses, without the gases, in the first instance, being diluted by mixture with the outside air."

Under the influence of these restrictions, the fever at the date of the report (November) was rapidly declining, no fresh cases having been reported for three weeks. And it is believed that so long as the present regulations are adhered to, Croydon will be free from any epidemic of the disease; although owing to local imperfections in the arrangement of house-drains, &c., and to the fact that the health board has not full authority over the important details of private drainage works, there must long continue to be sporadic cases of the disease, as in all other towns similarly situated; and practically all are at least as badly off as Croydon.

CORRESPONDENCE.

CHICAGO, December, 1875.

WITHIN the past four years, Chicago has made her history (architecturally), and has piled up her miles after miles of building materials, so that one hardly knows where to begin to talk of them. I will begin by giving you a bit of history.

That great episode in our history, now known as "the Great Fire," to distinguish it from the other fire two years later, which only took off about half a mile of buildings, caused a spontaneous outburst of genuine charity which was even felt in Washington; and Congress thought that the nation also should do something for us. Its charity came in the form of a toy to cost four millions, and to be of the design of Mr. Mullett. The appropriation was made by Congress in the spring of 1872. The whole of that summer was consumed in finding a site, and condemning the land. Twelve hundred thousand dollars of the money was paid out for this purpose, and the work on the foundation was not commenced until late in the fall of 1872. Only a small amount of the concrete had been put down before the severity of the winter compelled a suspension of the work. The concrete was covered with three feet of dry sand, which had been purchased for use in the construction of the building. Work was resumed with great activity in the spring of 1873; but the concrete, which formed the lower course of the foundation, had not been completely put in until the summer was nearly past, though the area wall had been completed, and the east, south, and north fronts were well above ground at this time. The system followed in carrying on the works was, to build the area or retaining wall around the whole site; and then, with pumps con-

stantly working, to put in the concrete, with continuous courses under all exterior walls and ranges of piers, of thickness varying from two and a half to four feet, and covering the entire remaining area with a course of concrete of about eighteen inches in thickness. It should be borne in mind that the site is a wet one, and that the foundations of all business buildings in Chicago are built below the natural water level, and on the top of a bed of clay which is of unequal thickness and density, but generally level on top, and in most places averaging thirteen feet in depth below the grade of curbstones.

By the time work was suspended in the latter part of 1873, the building had reached the height of the first story floor on all except the west side; and on that side the basement foundations only were built. The winter was a mild one, and there was but a short interruption of the work. During 1874 the first story was built, except the wall and piers on the west, or Clark Street front, which were only carried up to the level of the sidewalk. During this summer the corner-stone was laid with Masonic ceremonies; the day set apart for the formality was a public holiday in the city; and from that time forward the building attracted a great share of the attention of the people of Chicago, most of whom had previously been indifferent to what was being done on the Government Square. The work was pushed with great vigor, and was continued as long as possible into the winter of 1874–'75, but at last was stopped for the season. While attempting to work through the winter, as is often done on large buildings in Eastern cities, it seems that no efforts were made to protect the existing parts from the possible action of frost, so that, when the workmen were driven away by intensely cold weather, the work was left in its then condition until the spring of 1875. It so happened that the intervening winter was the most severe ever known in Chicago, as well as throughout the country generally, and thus continued almost without abatement until near the 1st of April. As some indication of what the weather was in this city during that time, I will say that according to general testimony the ground in the streets and elsewhere was frozen to an average depth of five feet, while places were found in which it was necessary to excavate seven feet in order to get below frost for the repair of street water-mains.

Some attempts seem to have been made to protect the concrete under the building by covering it with sand, as had been done during the first winter; but it was not uniformly distributed. It is customary here to cover all foundations where cellars are left exposed during the winter with a bed of stable-manure; and where extra precautions are taken the manure is covered with sand, to save the loss of heat which would be occasioned by the exposure of the upper side. This course has never been taken with the government building.

As early as possible in the spring of 1875, work was commenced again on the building. Stone-cutting had continued through the winter in closed sheds at the contractor's yard; and a large amount of worked material had accumulated. The second tier of iron beams had been completed during the winter; and when work was resumed the stone-setting was commenced on the second story piers of three fronts, the Clark Street front being just up to the ground. Three large porticos on the three other fronts were set, with ceilings of very large stones panelled on the under side, and intended eventually to be dressed off on the upper or weather side. The second-story piers had been built up to half the height of that story on the three sides, when Supervising Architect Potter visited the building for the first time since his accession to office. From that time commences an episode in the history of this structure, which has been made notorious by the press of this city, and is only imperfectly understood elsewhere. The supervising architect became aware from actual observation, that the interior brick walls contained many cracks, and that the cut-stone work was not only disintegrating, but had been extensively patched to cover defect in the material employed. The material was from what is known as the California ledge of the Buena Vista quarry, situated on the north bank of the Ohio River, about one hundred miles below Cincinnati and is a dark drab freestone of very fine grain, composed of fine sand and clay.

A few days after his return to Washington, the people of Chicago were astonished to learn that the local superintendent had been removed, and work had been stopped, by order of the supervising architect of the Treasury. Meanwhile two experts from the supervising architect's office were sent to make a more particular examination, and in due time reported. But this report was never made public, though the press despatches from Washington said that it confirmed the report of the supervising architect.

On account of the excitement which had been caused by the newspapers and the divers opinions which were given, the Secretary of the Treasury determined to appoint a commission of experts to examine the structure, and report to him. He appointed as such commission, William S. Smith, civil engineer, of Chicago; George B. Post, architect, of New York; and O. M. Norcross, builder, of Boston. The commission met in Chicago, and devoted an entire week to the examination of the building. Their report was made at Washington on the 15th of June. I will give the facts reported by the first commission, in as few words as possible. They reported that "Serious cracks were discovered in the walls, and movements in the stone-work; which have caused in various places openings of the joints, settlement of voussoirs of arches, fracture of lintels, crimping of vertical joints, and sprawling of stones in the jambs of openings. The building appeared to have settled; and on examination the concrete foundation was found badly cracked. With regard to the ground under the building they said, "It was found so soft that it could be readily cut and removed with a spade, which could be forced into it to its full length by a workman without difficulty. It contains decaying vegetable matter. Below this clay, throughout one-third of the area covered by the building, there is a deposit of mud, varying in depth, as shown by the borings and sections, from three to fourteen feet. This mud is so soft that the weight of one man is sufficient to force an auger one and a half inches in diameter through it, after overcoming resistance from friction on the rod pressing through five and a half feet of waxy clay." . . . "The mud was semi-fluid, and equally soft wherever found. Underlying the mud there is a stratum of clay, which, at depths as shown by the tables and sections, varies from twelve to thirty-two feet. It is stiff and firm, and, so far as the examples brought up indicate, free from admixture of vegetable matter." On the subject of weights and sustaining power they say, "The tests of the sustaining power of the loamy clay on which the concrete rests reveal the fact that it begins to yield under a pressure of from thirty-six hundred to thirty-eight hundred and four pounds per square foot." Considerable space is given to a description of the bad condition of the cut stone. The mortar is said to be poor in quality, the sand fine, and deficient in sharpness. The general conclusions of the commission are as follows :—

"1. That, if no mud had been found underlying the building at slight depths below its foundations, the clay upon which the foundation rests is too weak to sustain the great weight of the building when completed; and dangerous settlements under the weight would occur.

"2. Owing to the existence of these mud-holes, and of the depths and in the positions shown, the absolute failure of the building is rendered inevitable unless means should be adopted to provide firm foundations for the building, which could only be done by a very large expenditure of time and money.

"3. The stone used in the construction of the building, having disintegrated rapidly already, being of various colors, and being patched, puttied, and painted, is totally unfit for the purpose.

4. If the foundations were perfect, the character of construction and materials of the building is (*sic*) such that it would not deserve to stand, as that any costly effort to make it good would be but added folly. The commission therefore reports that it is of the opinion that it will be impracticable, unadvisable, and waste of time and money, to proceed further with the construction of the building."

Upon receipt of the report of the committee, the Secretary of the Treasury decided that it was not expedient to proceed further with the work of construction; nor did he think it proper to tear down the work already constructed, and thus destroy at least a part of the evidence of the alleged defects, without giving Congress an opportunity to cause to be made further examination of the foundations and superstructure, should it be proper to do so. He did not think he was authorized to use the unexpended balance of the appropriation in taking down and removing the unfinished building. The supervising architect was therefore directed to preserve the building in its then condition until Congress should meet.

In my next letter I will give a short sketch of the operations of the two succeeding examining commissions, the one comprising six Chicago architects and the city engineer, appointed by the mayor of the city; and the other consisting of architects, engineers, and builders, comprising the second and last Commission, half of the number appointed by the Secretary of the Treasury, and the other half by the President of the United States.

NOTES AND CLIPPINGS.

A NEW Gothic church, dedicated to St. Paul, is in course of erection in Rome, from the designs of Mr. G. E. Street. The church, which is being built for the Americans, consists of nave and aisles, of five bays, and a semicircular apse. The walls are constructed of brick and stone in alternate courses, stone from Arles being employed for the interior, and travertine for the exterior work. The nave arcade is carried on columns of red granite with gray marble shafts. The building, which is now roofed in, is covered with tiles, and the aisles are groined in brick with stone ribs, and the apse has a semidome in brick. The tower, which will be crowned with a low spire, will measure forty-three metres from the ground to the top of the cross on the summit. The building is lighted by two-light windows in the aisles, and single lights in the clerestory, and a large rose window at the west end. — *The Architect.*

THE condition of the west front and south-western tower of Lincoln Cathedral is said to be insecure, the front being quite out of the vertical. The Dean and Chapter have consulted in the matter with their architect, Mr. Pearson, and with Mr. Barlow, vice-president of the Institution of Civil Engineers, both of whom report that immediate repairs are necessary to secure the work. The architect recommended an effort to force back the front to its right position; but the engineer thinks this "a delicate and perilous piece of engineering." Fortunately the trouble is not in the foundations, but in the successive alterations of the superstructure. Canon Blakesley, in a letter explaining why they called in a civil engineer as well as their architect, says, "The importance of the matter may be imagined when I say that, although to the eye of the common observer the appearance of the structure will not be altered if the attempt to be made is successful, yet the danger now apprehended is no less than that of the fall of a large portion of the western front, and one of the towers."

SIR E. BECKETT in a letter to The Times says, —

Sir Gilbert Scott's estimate of the sum required to prevent the south side of the nave of St. Alban's Abbey from falling is not less than thirty thousand pounds. The reasons for its being so much are, first, its great size; secondly, its dangerous condition, the upper part of it being absolutely ruinous already, and stones continually falling on the aisle roof; and, thirdly, the fact that, the wall being far from perpendicular, the roof of the nave, and the vaulting of the aisle, must evidently all be done at once, together with the requisite buttressing to keep it safe afterwards.

A few years ago, the great tower was taken in hand, and the piers in a great measure rebuilt, only just in time to save it from falling like Chichester; and it is now in a condition to stand as long again as it has done already, viz., from Norman times. Other necessary and substantial repairs have been done gradually; and in a short time all the central part of the church will again be ready to be used for service, with temporary fittings, leaving the nave free for the repairs so urgently needed there.

Although the sum required is large, and the work must obviously be undertaken as a whole, it is much less than has been spent on many other cathedrals and churches of less magnitude, antiquity, and architectural value. It should be added for the information of those who do not know it, that the part now in danger is by far the finest of the building, though not the oldest. Probably also few people are aware that this is the longest church in the world, except St. Peter's at Rome.

SIR J. NOEL PATON, R. S. A., whose illustrations of The Ancient Mariner are probably familiar to many of our readers, has nearly finished a large picture of Christ in the wilderness. The picture represents Christ sitting upon a rock in the twilight, and is an illustration of the text, "Surely he hath borne our griefs, and carried our sorrows." It would seem to show the same tendency to ally the naturalistic painting of the English painters of the day with more or less of conventionalism, which may be seen in other works of the same artist. The Saviour is said to be represented in the traditional colors, and with the nimbus, in the midst of a landscape painted with modern realism.

A STATE Archæological Association has been formed in Ohio, to promote investigation of the mounds and earthworks of the State, to collect facts, descriptions, relics, and other evidences of the prehistoric races, and to awaken an interest in the general subject of archæology. The library and cabinet of the association will be established in the State House at Columbus, provided the State furnish suitable accommodations free of cost. The meetings will be held annually in the various cities of Ohio; and a yearly bulletin will be published. The first annual meeting will be held at Newark, Licking County, on Tuesday, Sept. 5, 1876.

A SEWER must, of course, have sufficient descent towards its mouth to carry down the solid and liquid substances intrusted to it; but, unless there be an adequate water supply to wash it out thoroughly, a certain amount of putrescent matter will adhere to its sides; and under any circumstances the gases of decomposition, being lighter than air, flow in an ascending current towards the highest point of sewerage, where their accumulation exerts an enormous pressure. Sewers, therefore, should have perfectly smooth walls; they should be traversed by water enough to wash out all impurities; and they should be amply ventilated, especially at their highest points, provision being made to let the poisonous vapors escape into the open air, instead of forcing their way into inhabited apartments. Since these vapors, if set free as they form, little by little, in the outer atmosphere, are rapidly diffused and diluted, there is actually less danger from an uncovered drain than from an unventilated sewer. It ought not to be necessary to add that drainage and sewage are totally different things, to be kept as distinct from each other as possible. A drain needs porous sides to draw off water from the surrounding soil: a sewer must have impermeable walls to prevent the soakage of putrescible matter into the dampened earth.

Bad as are imperfect sewers, however, cesspools are infinitely worse; for these are simply receptacles for the permanent storage of decomposing filth, and the manufacture of sewer-gas at wholesale, generally with no other outlet than the waste-pipes connecting with the interior of a house. To quote from Playfair's excellent address before the British Social Science Association: "Instead of allowing garbage to be freely oxidized, or apply it to plant-life, which is its natural destination, we dig holes close to our own doors, and cherish the foul matter in cesspools under conditions in which air cannot enter freely, and therefore the most favorable for injurious putrefaction. We forget the experience of our forefathers, that every cesspool has its own particular evil spirit residing within it; and we are surprised when the demon emerges, especially at night, and strikes down our loved ones with typhoid fever or other form of pestilence."

A single cesspool on a large place, far removed from well or cistern, and not connected by modern plumbing improvements with the inside of a dwelling, may not do much harm; but when we come to divide our real estate into lots of fifty or twenty-five feet width, each with its reeking cesspool, the combined exhalations are enough to poison the entire neighborhood; and already the sick-list of several crowded localities on Staten Island, particularly in the prevalence of typhoid and diphtheria, gives warning of this peril, which is augmented as population increases. — *Dr. Alfred L. Carrol on Sewers and Cesspools.*

A FRENCH engineer, M. d'Adhemar, has invented a coating or paint which is said to preserve iron from rusting better than any thing known, besides being cheaper than red lead paint. Some years ago, in exploring some salt-wells among the Pyrenees, he discovered iron balls in them unoxydized: later, in Guadaloupe, he found iron scales or scraps which had lain in the ground without rusting. In both cases he observed the soil to contain sulphur; and the exterior films of the metal in both cases proved to be substantially the same, being sulphuretted. Acting on these hints, he has prepared a preservation or pigment, which can be applied with any of the ordinary painter's vehicles, and which vulcanizes, as he says, the surface of the iron as sulphur does india-rubber, remaining unchanged for years.

ANOTHER Frenchman, M. Lostal, noticing that the boards of mortar-beds become very hard, and resist decay, has invented a process for preserving wood by impregnating it with lime. Lumber is piled in a vat, and covered with quicklime, which is slaked by sprinkling. The vat is filled with water to the top of the wood, which remains some days undisturbed, and is believed to absorb the lime through its whole structure, becoming hardened, and secured against dry-rot.

THE *Academie des Inscriptions et Belles-Lettres* has this year decreed the "Fould" prize of twenty thousand francs to Mr. Fergusson for his History of Architecture.